

THE WORLD'S SUPPLY OF WHEAT.

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WHEAT is grown in nearly all parts of the inhabited world. (See fig. 10.) The great surplus-producing regions, however, are limited to the United States, Canada, Argentina, Australia, India, and Russia. When the world is at peace, the surplus wheat of each of these countries begins soon after harvest to move along the customary channels to the countries whose demand exceeds their supply. A low yield in one country in any year may be offset by a high yield in others, so that normally the world's supply is maintained and all countries receive their share of bread.

Table I shows the estimated annual production of wheat in the world from 1909 to 1916 inclusive.

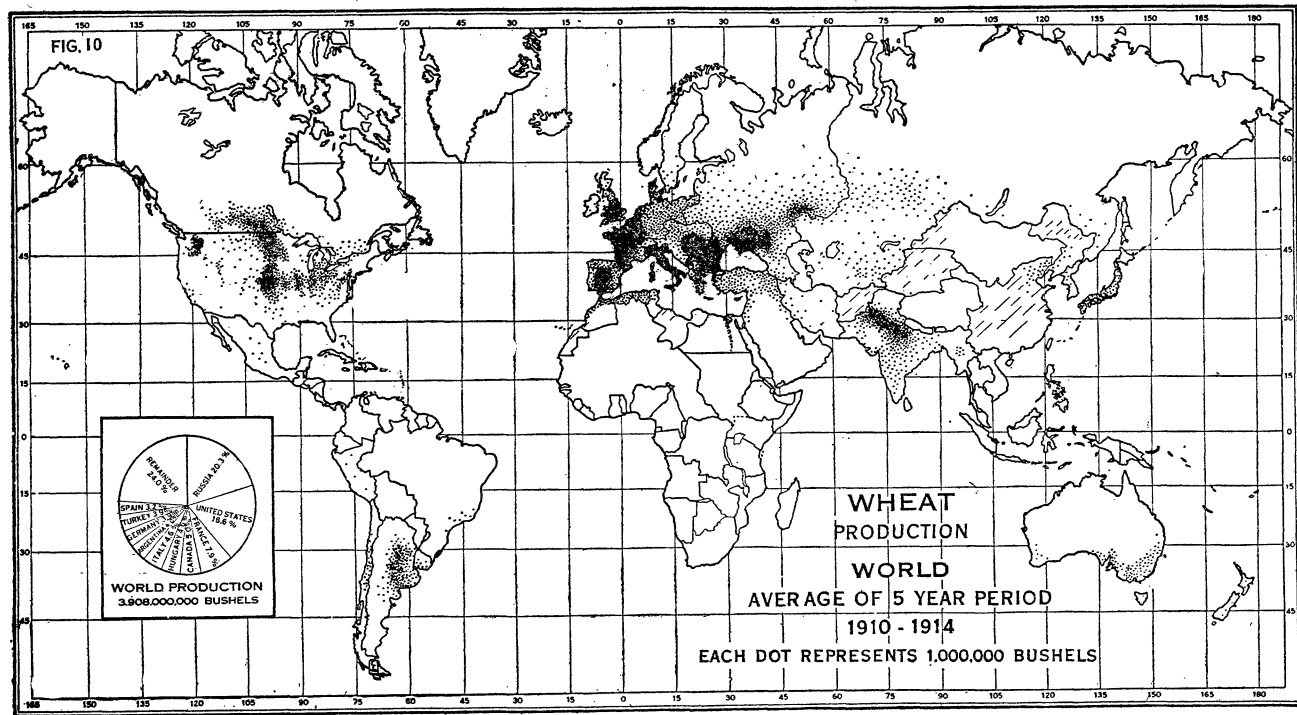
TABLE I.—*World production of wheat.*

(Bureau of Crop Estimate's Monthly Crop Report, May, 1917.)

Year.	Bushels.
1909	3,582,000,000
1910	3,575,000,000
1911	3,552,000,000
1912	3,792,000,000
1913	4,127,000,000
1914	3,586,000,000
1915	4,145,000,000
1916	a 2,984,000,000

a Most of Central Europe, Poland, and Asiatic Russia not included. The countries included produced in 1915 2,433,000,000 bushels.

The world wheat crop of 1913, amounting to over 4 billion bushels, was the largest produced before the war. Short crops in Canada and Australia in 1914 reduced the total for that year to somewhat below the figure for 1913, but the increase in the acreage sown in many countries under the stimulation of high prices and patriotic appeals, together with good yields everywhere, resulted in the production in 1915 of the largest wheat crop ever harvested. In the next year there was a marked decline, and in 1917, though the total is not yet estimated, it is believed the crop is but little larger than that of 1916.



EFFECT OF THE WAR ON WHEAT ACREAGES.

Table II shows the acreage of wheat in the principal countries prior to the war as compared with that harvested since.

TABLE II.—*Wheat acreage, principal countries; average 1909-1913 and annual 1913-1917.^a*

(Thousands of acres.)

Country.	Average, 1909-10 to 1913-14.	1913 and 1913-14.	1914 and 1914-15.	1915 and 1915-16.	1916 and 1916-17.	1917 and 1917-18 (prelimi- nary esti- mates).
Allied western European coun- tries:						
France.....	16,160	16,165	14,974	^b 13,563	^b 12,429	^b 10,439
Italy.....	11,722	11,722	11,784	12,501	11,679	10,556
United Kingdom.....	1,888	1,791	1,905	2,333	2,051	2,104
Total.....	29,770	29,678	28,663	28,397	26,159	23,099
Russia, European.....	58,926	59,739	61,580	^b 58,224	^b 48,525	.....
Asiatic, 9 Governments.....	9,521	12,360	13,618	^c 14,532	^c (14,532)	.....
Asiatic, other Governments.....	7,287	8,248	(8,248)	.....	.....	.....
Total.....	75,734	80,347	83,446	.....	.....	.....
English and French colonies and dependencies:						
Canada.....	10,494	11,164	10,294	14,675	12,879	14,757
Australia.....	7,603	9,286	9,651	12,530	11,530	8,644
India.....	29,217	30,042	28,463	32,474	30,142	33,039
Egypt.....	1,315	1,354	1,300	1,581	1,447	1,116
Algeria.....	3,494	3,447	3,368	3,210	3,272	3,222
Tunis.....	1,310	1,520	1,003	1,112	1,482	1,310
Total.....	53,433	56,813	54,079	65,582	60,752	62,088
The United States and South American exporting countries:						
United States.....	47,095	50,184	53,541	60,469	52,785	45,941
Argentina.....	16,052	16,244	15,471	16,420	16,089	17,581
Chile.....	1,004	1,018	1,074	(1,074)	(1,074)	(1,074)
Uruguay.....	791	912	783	949	780	1,014
Total.....	64,942	68,358	70,869	78,912	70,728	65,610
Neutral European countries:						
Spain.....	9,548	9,644	9,681	10,037	10,148	10,223
Switzerland.....	104	104	104	114	124	139
Netherlands.....	138	141	148	161	134	(122)

^a Year of harvest in the northern hemisphere; in the southern hemisphere, year sown and harvested.

^b Excluding territory in enemy occupation.

^c Ten Governments.

TABLE II.—Wheat acreage, principal countries; average 1909–1913 and annual 1913–1917—Continued.

(Thousands of acres.)

Country.	Average, 1909–10 to 1913–14.	1913 and 1913–14.	1914 and 1914–15.	1915 and 1915–16.	1916 and 1916–17.	1917 and 1917–18 (prelimi- nary esti- mates).
Neutral European countries—Con.						
Denmark.....	114	133	133	166	152	131
Norway.....	12	12	12	12	14	(14)
Sweden.....	247	288	269	299	337	329
Total.....	10,163	10,322	10,347	10,789	10,879	10,958
Total above, excluding Rus- sia.....	158,300	165,171	163,958	183,680	168,518	161,755
Central Powers and their allies:						
Germany.....	4,769	4,878	4,932	4,949		
Hungary (Kingdom).....	9,088	7,700	8,624	8,204		
Austria.....	^a 3,012	2,997	^b 1,661			
Bulgaria.....	2,654	2,511	2,639			
Turkey.....						
Total.....	19,523	18,086	17,856			
Territory occupied wholly or in part by the Central Powers:						
Roumania.....	4,576	4,010	5,219	4,705	4,843	
Serbia.....	8,742	10,524				
Belgium.....	395	393	400			
Luxemburg.....	27	27	27	30	27	
Total.....	13,740	14,954				

^a All Hungary.^b Exclusive of Galicia and Bukowina.

Much of the data for Tables II, III, and IV, as well as for the text, are taken from Statistical Notes on Cereals by the Bureau of Statistics, International Institute of Agriculture. Figures in parenthesis estimated by interpolation.

THE ENTENTE ALLIES.

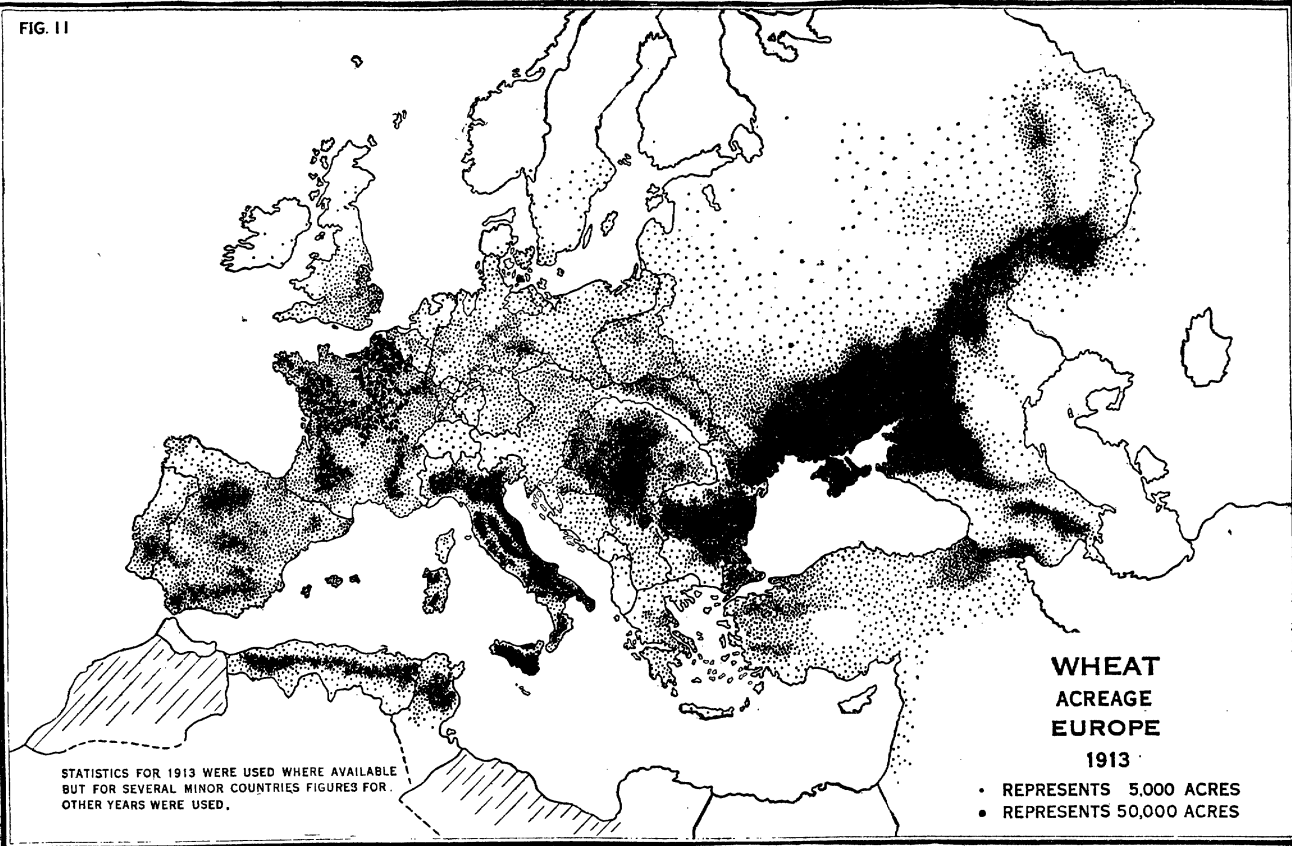
The war has weakened the producing power of the allied European countries. In the first year a large number of farmers were withdrawn from the fields of France and the United Kingdom, fertilizers and machinery became scarce and expensive because of the need of the materials for war purposes, while at the same time the German armies overran and occupied about half a million acres of the wheat lands of France. (For the distribution of wheat acreage in Europe see fig. 11.) The result of the first year in France was a

**WHEAT
ACREAGE
EUROPE
1913**

- REPRESENTS 5,000 ACRES
- REPRESENTS 50,000 ACRES

STATISTICS FOR 1913 WERE USED WHERE AVAILABLE
BUT FOR SEVERAL MINOR COUNTRIES FIGURES FOR
OTHER YEARS WERE USED.

FIG. 11



decline of nearly one and a half million acres, with a further decline of over a million acres in 1916, and then of nearly two million acres more in 1917. Italy had not entered the war when her 1915 wheat crop was sown, which was nearly a million acres larger than usual. After this first year her wheat acreage declined about a million acres a year. In the United Kingdom the acreage increased the first year of the war and has since remained a little above the average before the war.

The reasons why the United Kingdom has been able to maintain her wheat acreage better than France or Italy deserve a word of explanation. It is less difficult to increase the wheat production of the United Kingdom than that of France or of Italy, because there is a greater proportion of arable land uncultivated but available for wheat in the United Kingdom. Great Britain, which formerly cultivated a large acreage of wheat, has, owing to the importation of cheap wheat free of duty, turned much of the wheat land into meadow and pasture, whereas Italy and France have constantly maintained a large acreage of wheat and of other cultivated crops. In the first year of the war the farmers of the United Kingdom increased their wheat acreage in the face of the scarcity of labor, of machinery, and of fertilizers, in part by sowing less barley and in part by plowing more land. The resulting shortage of barley induced the farmers to return to that crop the next year, nor were they able to maintain the total acreage in crops, and wheat declined nearly 300,000 acres. In 1917 there was a slight increase of wheat in Great Britain, and a large increase in Ireland, so that the total for the United Kingdom was greater than in 1916.

In Russia some of the wheat-producing areas have been overrun by armies, while the wheat acreage of the remainder of the country has declined, owing in part, perhaps, to the withdrawal of men from the farms, but mostly to the economic disorganization and to the lack of a foreign market for the surplus wheat.

The colonial possessions of Great Britain and France have been drawn upon for men and supplies and at the same time have succeeded in increasing the acreage of wheat harvested. The wheat of the principal dependencies averaged

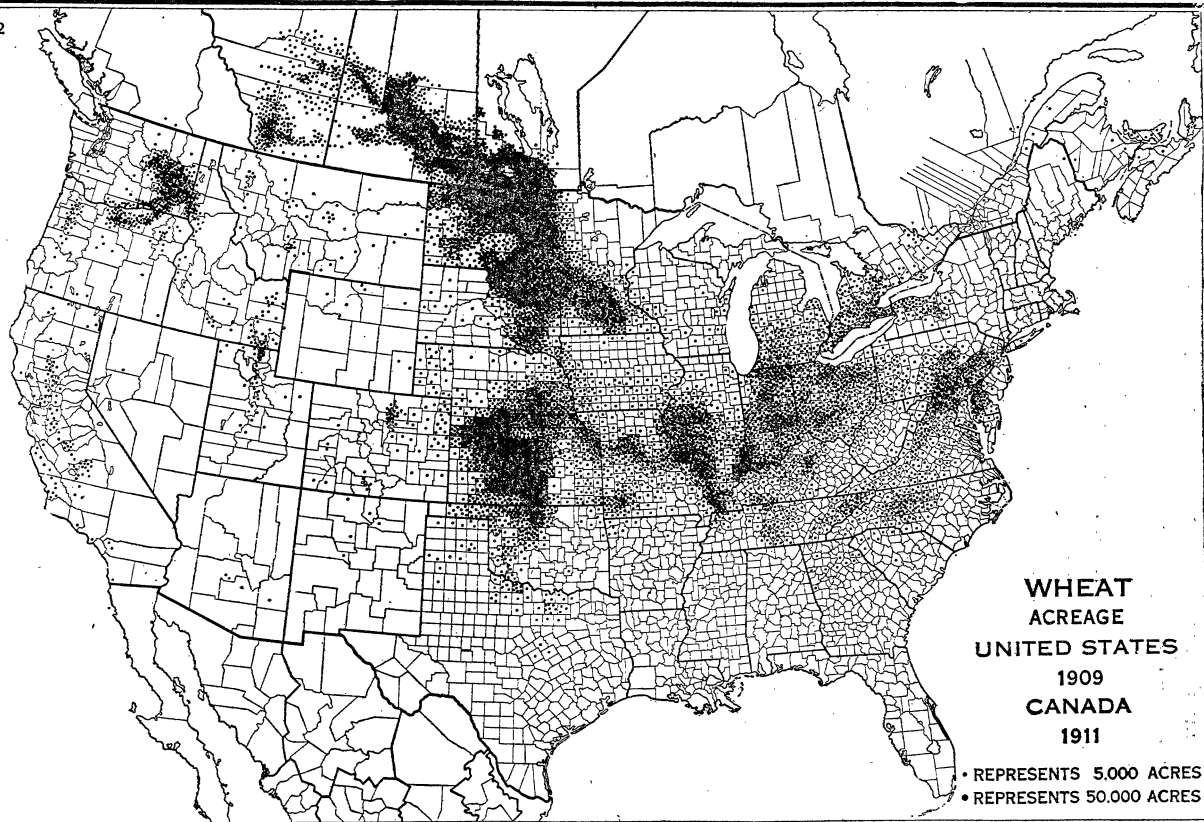
53,000,000 acres before the war, to which 12,000,000 were added in the first year, 1915. Canada contributed over 4,000,000 acres of this increase. The small grain in Canada ripened early in 1914, was expeditiously thrashed and marketed, and favorable weather conditions enabled the western farmers to complete an unusually large proportion of the fall plowing in readiness for the next year's crop. (For the distribution of the wheat acreage of the United States and Canada see fig. 12.) A larger acreage than usual of winter wheat was sown. The spring of 1915 opened early, and the conditions for seeding spring wheat were generally favorable. Good prices and favorable seasons induced Australia also to increase her acreage in wheat from 9,000,000 to 12,000,000, and India increased her acreage from about 28,000,000 to 32,000,000. In these countries the increase in the wheat area was not obtained at the expense of other crops; and in India the acreage in other crops also showed a large increase. In Canada and Australia the increase was probably mostly on newly broken land, while in India the increase required a curtailment of the fallow land. The wheat acreage of Egypt also increased, while no unusual change took place in the other North African districts.

Since 1915 the wheat acreage of the principal French and English possessions has been greater than the acreage before the war but has not again reached the high point of that year. India, however, in 1917 harvested a larger acreage than in 1915. Canada and Australia have lost men, not only by enlistment but also through a decline in immigration. In Canada immigration amounted to over 384,000 in 1913-14, as compared with only 49,000 in 1915-16, and in Australia to 37,000 in 1913, as compared with only 1,000 in 1916. Another reason for the decline in wheat acreage in 1916 is found in the relatively low prices received for the crop of 1915, while in Australia the large accumulated left-over stock from 1916 has tended to decrease the acreage of 1917.

THE CENTRAL POWERS.

The data on the wheat acreage of the Central Powers after 1914 are insufficient to make possible any comparisons of the acreages before and after the war began. Bulgaria

FIG. 12



entered the war in 1915, and in 1916 a large part of Roumania was added by conquest, which greatly increased the capacity of the Central Powers to produce wheat. The northeastern section of France and the invaded parts of Russia also have contributed something to the total wheat acreage of these Powers, but, on the other hand, Austria has been deprived for part of the time of the wheat of Galicia and Bukowina.

EUROPEAN NEUTRALS.

The neutral European countries had only a small acreage before the war, but the uncertainty of the supply from other countries and high prices caused them to increase their acreage to some extent. Spain is the only country in this group which has any considerable area suitable for growing wheat, and in 1917 she had added three-fourths of a million acres to the average before the war, this increase alone being more than equal to the total acreage of all the other neutral European countries.

UNITED STATES AND SOUTH AMERICA.

The acreage of wheat in the United States and in the South American exporting countries has been affected by the war, even though at the time of seeding wheat for the harvests of 1915, 1916, and 1917 these countries had neither withdrawn their own men from their fields for service in war nor been in position to urge upon their farmers the sowing of more wheat as a patriotic duty. The total acreage of this group of countries was normally increasing before the war, owing in large part to an advance in settlement that brought into cultivation new lands physically and economically suitable for wheat production. When war broke out in Europe immigration to the New World declined and many of the former immigrants returned to fight for their mother countries. The high prices in the autumn of 1914, however, stimulated farmers in the United States greatly to increase the wheat acreage, 7,000,000 acres being added. There was an increase in Argentina of 1,000,000 acres, and a relatively large increase also in Uruguay. The lower prices received for the 1915 crop had the same effect in America as elsewhere. The higher prices in 1916 again stimulated greater activity in the sowing of wheat for 1917, but in the

United States an unusually bad season for winter wheat reduced the acreage to be harvested to the lowest point in recent years. Argentina and Uruguay, however, have the largest acreage in their history to harvest in 1917-18. The net result in the United States and in South American countries in 1917 is, at the end of a period of three years of war, an acreage only slightly larger than that before the war began.

CHANGES IN WHEAT PRODUCTION.

Table III shows the changes in wheat production which have occurred in the principal countries since the beginning of the war. Production, being affected by weather conditions as well as by acreage, is not a reliable criterion of the effects due to war, but, on the other hand, statistics of production are of greater significance than those of acreage as regards the food supply of the world.

TABLE III.—*Wheat production in principal countries; average 1909-10 to 1913-14 and annual 1914-1917.^a*

(Thousands of bushels.)

	Average 1909-10 to 1913-14.	1914 and 1914-15.	1915 and 1915-16.	1916 and 1916-17.	1917 and 1917-18 (preliminary estimates).
Western allied European countries:					
France.....	317,635	282,680	^b 222,775	^b 204,908	^b 144,149
Italy.....	183,335	169,582	170,541	176,530	139,999
United Kingdom.....	59,638	62,431	73,913	60,630	63,824
Total.....	560,608	514,702	467,229	442,068	347,972
Russia, European ^c	624,615	573,376	749,862	595,418	.....
Asiatic, 9 Governments.....	82,371	.....	98,740	.....	.....
Total.....	706,986	.....	848,602	.....	.....
English and French colonies and dependencies:					
Canada.....	204,708	161,281	426,748	262,781	231,730
Australia.....	90,499	24,894	179,627	143,475	122,880
India.....	351,762	312,028	376,726	318,002	379,303
Egypt.....	34,814	32,830	39,146	36,543	30,000

^a Year of harvest in the northern hemisphere; in the southern hemisphere, year sown and harvested.

^b Excluding territory in enemy occupation.

^c Forty-eight Governments not invaded.

TABLE III.—Wheat production in principal countries; average 1909-10 to 1913-14 and annual 1914-1917—Continued.

(Thousands of bushels.)

	Average 1909-10 to 1913-14.	1914 and 1914-15.	1915 and 1915-16.	1916 and 1916-17.	1917 and 1917-18 (preliminary estimates).
English and French colonies and dependencies—Continued.					
Algeria.....	34,998	19,165	34,653	29,151	28,979
Tunis.....	6,224	2,205	11,023	7,165	7,000
Total.....	723,005	552,403	1,067,923	797,117	799,892
The United States and South American exporting countries:					
United States.....	686,692	891,017	1,025,801	639,886	650,828
Argentina.....	147,062	169,166	172,650	70,224	237,913
Chile.....	20,062	19,000	21,145	(21,145)	(21,145)
Uruguay.....	6,518	3,597	9,867	5,390	10,000
Total.....	860,334	1,082,780	1,229,463	736,645	919,886
Neutral European countries:					
Spain.....	130,446	116,087	139,298	152,329	141,008
Switzerland.....	3,314	3,278	3,957	3,821	4,556
Netherlands.....	4,898	5,688	5,681	4,710	3,452
Denmark.....	5,342	5,787	7,984	6,044	(6,004)
Norway.....	305	268	283	316	243
Sweden.....	8,117	8,473	9,171	8,979	7,496
Total.....	152,422	139,581	166,374	176,199	162,799
Total above excluding Russia....	2,296,369	2,289,466	2,930,989	2,146,884	2,241,944
Central Powers and their allies:					
Germany.....	152,117	145,945	^a 141,675	.....	.....
Hungary (Kingdom).....	156,523	105,237	151,405	.....	.....
Austria.....	60,840	.....	.....	.....	.....
Bulgaria.....	42,439	25,981	46,212	.....	.....
Total.....	411,919	.....	.....	.....	.....
Territory occupied wholly or in part by the Central Powers:					
Roumania.....	87,791	46,297	89,786	78,521	.....
Serbia.....	^b 14,775	.....	.....	.....	.....
Belgium.....	14,896	.....	.....	.....	.....
Luxembourg.....	614	525	514	433	390
Total.....	118,076	.....	.....	.....	.....

^a Incomplete.

^b Two years' average, 1910-11.

Figures in parenthesis estimated by interpolation.

The production of wheat in both France and Italy has declined more rapidly than the acreage. The production in France decreased 60,000,000 bushels during the first year of the war, and in 1917 is estimated at only about half the average crop before the war began. This is owing in part to the loss of considerable wheat land now in German occupation. The yield per acre, however, has decreased from an average of 20 bushels before the war to an average of 16 bushels during the past three years. In Italy the yield per acre has decreased from an average of 17 bushels to 14 bushels. In the United Kingdom, although the acreage was greater in 1917 than before the war, the production was practically the same. The preliminary estimates for 1917 for the western European Allies as a whole are 200,000,000 bushels less than the average before the war.

It seems reasonable to expect that the scarcity of labor would result in less efficient cultivation and consequently in lower yields, but another reason for the general decline in yields in western Europe is the shortage of fertilizers. In these countries fertilizers are a requisite for the maintenance of yields. The war stopped the exportation of German potash fertilizers, and very little is available outside of Germany and her allies. The cost of the transportation of materials, shortage of labor and inability to get sulphuric acid, which is so essential in the manufacture of superphosphates and other dissolved manures, have made it very difficult for farmers to secure any commercial fertilizers. In the United Kingdom sulphate of ammonia has taken the place of nitrate of soda, which is required for the manufacture of explosives, and since January 19, 1917, the exportation of sulphate of ammonia has been prohibited. In countries outside of Europe commercial fertilizer is not a very important factor in wheat production.

In Russia the crop of 1915 was estimated to be over 100,000,000 bushels larger than the average crop before the war, and the 1916 crop was but little below normal. No estimates are as yet available for the crop of 1917.

In the British and French colonies the increase in production has kept pace with that of acreage, the production during the past two years being about 100,000,000 bushels more than the average before the war.

The combined production of the United States and South American exporting countries for 1917 and 1917-18 is greater than the average before the war.

The neutral European countries increased their production in 1915 and in 1916, and the crop of 1917, while less than those of the previous years, is above the average before the war. The wheat production of the Central Powers and their allies since 1914 is unknown.

WAR MEASURES IN REGARD TO WHEAT.

Special efforts to increase wheat production have been made by the Governments of the countries engaged in the war. In Prussia in 1914 all uncultivated State lands were by decree placed at the disposal of agriculture, and in 1915 decrees were issued by Germany, Austria, and Hungary to compel the cultivation of private lands that had been neglected or that lay waste. In France by a law enacted in October, 1916, communal authorities were empowered to cultivate any arable land not in use. In the United Kingdom occupiers were required under penalties to cultivate their land to the fullest extent possible, and the Government claims the right to enter upon the premises, make a survey of the holding, and if not satisfied with the cultivation, to take measures to improve it. In 1917 the farmers in Ireland on holdings of 10 acres and over were required to cultivate the same areas as in 1916 plus 10 per cent of the whole extent of their holdings, if not over half was already under cultivation. The cantonal governments of Switzerland are requested by the Federal Council in a decree dated February 16, 1917, to undertake the cultivation for 1917, and for 1918 if necessary, of all agricultural land left untilled or not adequately farmed.

In some cases guaranteed prices, in other cases bounties or premiums have been offered to encourage production. Beginning with the harvest of 1917 and until the requisitioning of wheat is at an end, France will pay a premium equivalent to about 16 cents per bushel for wheat, and in 1917 the equivalent of \$1.56 for every acre under wheat beyond the area cultivated on the farm in the previous year. The Italian Government pays a premium equivalent to 36 cents per bushel for wheat grown upon soil brought into

cultivation in 1917 and has furthermore granted the ministry of agriculture the equivalent of about \$38,000 for the encouragement of cereal cultivation. In order that the farmers of the United Kingdom may not hesitate to break up pasture land the Government has guaranteed a minimum price for home-grown wheat for the next six years.

By act of Congress approved August 10, 1917, the President of the United States was empowered to fix a reasonable guaranteed price for wheat in order to assure producers a reasonable profit,¹ and by the same act at least \$2 per bushel for No. 1 spring wheat or its equivalent of the crop of 1918 is guaranteed at the principal interior markets until May 1, 1919.

It is very difficult in the belligerent countries to secure labor to cultivate and harvest the crops, since the men most capable of doing such work are nearly all in the Army. In Hungary and Italy the communal or municipal bodies have been authorized to requisition all labor available in the country, including women, girls, and boys. In France prisoners of war are being employed in agriculture, and mobilized men have been periodically placed at the disposal of directors of agriculture in busy seasons. A law of January, 1917, provides a credit equivalent to \$5,790,000 for the direct organization of agricultural labor. In the United Kingdom prisoners of war and interned aliens have been put to work cultivating the soil, and soldiers have been brought back and employed temporarily in the fields. The Governments of both the United Kingdom and France have provided aid for farmers wishing to purchase or secure the use of tractors and other farm machinery. The Cantons of Switzerland are empowered by the Federal Council to requisition labor and agricultural machinery. In the United States the Department of Agriculture in cooperation with the Department of Labor has organized a system of distribution of labor with a view to facilitating the movement of farm laborers in response to local demands.

¹ The price for the 1917 crop was fixed at \$2.20 per bushel (No. 1 northern spring wheat, or its equivalent, at Chicago).

EFFECT OF THE WAR ON INTERNATIONAL TRADE IN WHEAT.

TABLE IV.—*Net exports and imports of wheat,^a principal countries; average 1909-10 to 1913-14 and annual 1914-15 and 1915-16.*

(Thousands of bushels.)

Country.	Average 1909-10 to 1913-14.		1914-15		1915-16	
	Exports.	Imports.	Exports.	Imports.	Exports.	Imports.
Allied western European countries:						
France.....		43, 673		70, 136		90, 965
Great Britain and Ireland.....		216, 054		204, 065		211, 263
Italy.....		53, 219		59, 719		77, 172
Total net imports.....		312, 946		333, 920		379, 400
Russia.....	164, 147		7, 400		13, 591	
Russia and her European allies:						
Excess imports over exports..		148, 799		326, 520		365, 809
English and French colonies and dependencies:						
Canada.....	94, 820		83, 845		267, 785	
India.....	49, 589		28, 866		27, 222	
Australia.....	53, 101			5, 916	55, 637	
Algeria.....	5, 284		3, 527		5, 126	
Egypt.....		7, 815		1, 426	243	
Tunis.....		761		1, 565	364	
Excess exports over imports..	194, 218		107, 331		356, 377	
United States and South American exporting countries:						
United States.....	106, 934		311, 036		233, 056	
Argentina.....	83, 169		97, 965		85, 814	
Chile.....	1, 032			3, 068	213	
Uruguay.....	687		18		801	
Excess exports over imports..	191, 822		405, 951		319, 884	
Neutral European countries:						
Denmark.....		6, 283		4, 360		3, 538
Spain.....		6, 189		14, 436		12, 662
Netherlands.....		21, 916		29, 942		22, 799
Switzerland.....		16, 924		20, 514		15, 487
Sweden.....		7, 047		6, 555		9, 660
Norway.....		3, 836		7, 433		5, 853
Total net imports.....		62, 261		83, 260		60, 999

^aIncluding wheat flour reduced to wheat.

TABLE IV.—*Net exports and imports of wheat, principal countries; average 1909-10 to 1913-14 and annual 1914-15 and 1915-16—Continued.*

(Thousands of bushels.)

Country.	Average 1909-10 to 1913-14.		1914-15		1915-16	
	Exports.	Imports.	Exports.	Imports.	Exports.	Imports.
Central Powers:						
Germany <i>a</i>		68,339				
Austria <i>b</i>		51,341				
Hungary.....	40,829					
Bulgaria.....	11,089					
Excess imports over exports..		67,762				
Territory partly in possession of Central Powers:						
Roumania.....	53,642		3,674		22,347	
Belgium.....		49,390				
Serbia.....	3,567					
Excess exports over imports..	7,719					

a Includes Luxemburg, which forms a part of the German customs union.*b* Includes trade of Bosnia and Herzegovina.

Table IV shows the changes effected by the war in the international trade in wheat. It was inevitable that war should cause a great change in the movement of wheat. Immediately after war was declared all nations involved and many of the neutral countries took drastic measures to secure and conserve their own supply of breadstuffs. Indeed, prior to her entrance into the war, the United States, alone among the great producers, did not restrict or direct the exports of wheat. Before the war Russia exported large quantities to the United Kingdom, Italy, and France. Roumania exported large quantities to France and Italy. The neutral importing countries also received large quantities from Roumania and Russia. After war began the western European allies imported more wheat than before the war, and, with Russia out of the market, they were compelled to turn to their dependencies and the United States and South American countries not only to make up the loss of supplies from Russia and the Balkan States, but also for wheat to meet the increased demand and dimin-

ished production. The neutral European countries also have needed more wheat from countries outside of Europe, not only because of their loss of the wheat from Russia and Roumania, but also because they could get no rye from Russia or the Central Powers; and more wheat was necessary to take its place.

The wheat that was formerly sent from non-European countries to Germany helps to meet the extra demand of the Allies and neutrals, but most of this extra demand must be met by a world-wide increase in production as well as by a decided decrease in consumption. In 1914-15 owing to a shortage in Canada and a failure of the wheat crop in Australia the great bulk of the extra wheat for Europe had to come from the United States and Argentina. The United States had harvested a large crop and, consuming less than usual (Table V), was enabled to export 311 million bushels, 200 millions more than the average before the war. The good crops of 1915 enabled all countries to contribute toward making up the deficiencies of European countries. In 1916-17 the Argentine crop was almost a failure, which together with the shortage of tonnage for moving wheat from Australia caused the burden of supplying the European countries in 1917 to fall heavily upon the United States and Canada.

TABLE V.—*Supply and distribution of the wheat of the United States, 1908-1917.^a*

SUPPLIES.

Harvest year ending—	Crop harvested.	Supply on hand July 1.		Total supply.
		In farmers' hands.	In second hands.	
	<i>Thousands of bushels.</i>	<i>Thousands of bushels.</i>	<i>Thousands of bushels.</i>	<i>Thousands of bushels.</i>
1908.....	665,000	34,000	35,000	734,000
1909.....	683,000	15,000	28,000	726,000
1910.....	635,000	36,000	49,000	720,000
1911.....	621,000	34,000	58,000	713,000
1912.....	730,000	24,000	54,000	808,000
1913.....	763,000	35,000	55,000	853,000
1914.....	891,000	32,000	44,000	967,000
1915.....	1,026,000	29,000	26,000	1,081,000
1916.....	640,000	74,000	89,000	803,000
1917.....	651,000	16,000	32,000	699,000

TABLE V.—*Supply and distribution of wheat of the United States, 1908-1917—*
Continued.
DISTRIBUTION.

Year beginning July 1.	Popu- lation.	Con- sump- tion per capita.	Total con- sump- tion for food.	Re- quired for seeding.	On hand at close of year.		Exports.
					In farmers' hands.	In second hands.	
	<i>Thou- sands.</i>	<i>Bushels.</i>	<i>Thou- sands of bushels.</i>	<i>Thou- sands of bushels.</i>	<i>Thou- sands of bushels.</i>	<i>Thou- sands of bushels.</i>	<i>Thou- sands of bushels.</i>
1908.....	88,939	5.72	509,000	68,000	15,000	28,000	114,000
1909.....	90,556	5.30	480,000	74,000	36,000	49,000	87,000
1910.....	92,175	5.23	482,000	77,000	34,000	58,000	69,000
1911.....	93,793	5.15	483,000	72,000	24,000	54,000	80,000
1912.....	95,411	5.28	504,000	71,000	35,000	55,000	143,000
1913.....	97,028	5.66	549,000	82,000	32,000	44,000	146,000
1914.....	98,646	5.01	494,000	86,000	29,000	26,000	332,000
1915.....	100,264	5.89	501,000	84,000	74,000	89,000	243,000
1916.....	101,882	4.70	479,000	80,000	16,000	32,000	196,000
1917.....	103,500						
<hr/>							
Hypothetical distribution for 1917-18:							
Normal consumption.....		5.3	549,000	87,000	15,000	25,000	23,000
Last year's average consumption		4.7	486,000	87,000	15,000	25,000	86,000
Very low average consumption.		4.0	414,000	87,000	15,000	25,000	158,000

«Chicago Daily Trade Bulletin, July 16, 1917; Monthly Crop Report, December, 1917 Yearbook, U. S. Dept. Agr., 1916.

Before the war the Central Powers, including Bulgaria, imported on an average about 68,000,000 bushels of wheat. On the other hand, Germany exported about 26,000,000 bushels of rye more than she imported. Austria lost wheat and rye by the Russian occupation of Galicia and Bukowina, but on the other hand the occupation of Serbia, Roumania, parts of Russia, and northern France have more than made good these losses. If the Belgians are left to feed themselves, assisted by the Entente Allies and neutral countries, the Central Powers and their allies under normal weather conditions should produce sufficient breadstuffs to supply their own needs very nearly, if not entirely, provided labor and fertilizer are available for production.

PRESENT WHEAT SITUATION AMONG THE ENTENTE ALLIES.

The combined wheat production of the neutral countries and of the Entente Allies, exclusive of Russia and Roumania, for the period of 1909-1913 averaged 2,296 million bushels

annually, and they retained for consumption and carry-over 2,287 millions, or 9 millions less than they produced. In 1914 the same countries produced only 2 millions more than they had annually retained before the war, but in 1915 they produced 653 millions more than this average, which gave them a larger surplus than usual to carry over into 1916. However, their 1916 crops were short, amounting to only 2,152 million bushels, and estimates of requirements for 1916-17 by the Bureau of Statistics of the International Institute of Agriculture amount to 2,408 million bushels, which is 256 millions more than was produced in 1916. It is evident, therefore, that the large stocks that accumulated from the 1915 crop are considerably reduced. The visible supply in Canada June 30, 1917, was estimated to be 20 million bushels, against 49 millions on July 1, 1916, and in the United States 18 millions against 49 million bushels on the earlier date. Owing to the shortage of tonnage for moving wheat from Australia, a large stock has accumulated there, but nowhere else is there any considerable quantity of surplus wheat available for export. The Russian Central Statistical Committee has published figures of stocks mostly in dealers' hands January 14, 1917, amounting to 22 million bushels, and there may be large stocks in farmers' hands which are not being offered for sale on account of the chaotic conditions and the uncertainty as to the future policy; but Russia's stock of wheat is not available for her allies.

The situation at the beginning of the year 1917-18 may be summarized as follows: The total production of the neutral and entente allied countries, exclusive of Russia and Roumania, is greater than in 1916-17 (see Table III), but stocks are low, except in Australia. The allied western European countries have produced 213,000,000 bushels less than their average before the war, but the exporting countries which supply their deficiencies are harvesting more grain this year and will probably reduce consumption, so that they may export a larger proportion of their crops. Argentina, the United States, and Canada, the three countries which are in a position to export grain in largest quantities and most easily, are harvesting this year nearly 150,000,000 bushels more than last year, and slightly more than before the war.

A large share of the needs of the Entente Allies of western Europe must be met by exports from the United States. The annual distribution of the wheat crop of the United States is shown in Table V. It will be seen that America enters into the war with a short crop and with a low stock on hand. The problem is to reduce domestic consumption of wheat products to a minimum in order that there may be as much as possible left for export to the allies.

The estimated stocks on hand July 1 added to the estimated production of the year give 699 million bushels to be distributed between July 1, 1917, and July 1, 1918. This is the lowest supply that has been available in any year. The per capita consumption of wheat varies from year to year, the highest shown in the table being 5.80 bushels in 1915 and the lowest 4.70 bushels in 1916. The Bureau of Crop Estimates has estimated that the normal consumption in the United States amounts to 5.3 bushels per capita. Estimating the population of the United States this year to be approximately 103,500,000, normal consumption would require 556 million bushels; the seed requirements for next year are 87 million bushels, and by leaving only very small stocks on hand July 1, 1918, there will be only 23 million bushels left for export. If we consume wheat at the rate computed for last year, 4.7 bushels per capita or 0.6 bushel less than the normal amount, there will be approximately 86 million bushels for export. The investigations of the Bureau of Crop Estimates determined that the normal consumption of wheat in some of the Southern States, where little wheat is raised and the people eat much corn bread, was only 4 bushels per capita. If the people of the entire United States will substitute corn and potatoes for wheat to the extent that some of the Southern States do, the per capita consumption may be lowered to 4 bushels, and then there will be 158 million bushels available for export. Even this amount is considerably below what the United States has contributed to the allies during the previous years of the war, for the exports of domestic wheat during 1914-15 were 332 million bushels and during 1915-16 they were 243 million.